DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 17, 2010 has been entered. Claims 1-14, 16, 21 and 22 were previously canceled. Claims 23 and 24 have been canceled by this amendment. Claims 28-37 have been newly added. Claims 15, 17-20 and 25-37 are pending consideration.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites the limitation "the means for catalyzing the breakdown of hydrogen peroxide" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claims 27 and 37 recite “Produce decontaminated using the produce decontamination apparatus as claimed in claim 15" for claim 27 and “Produce

decontaminated using the produce decontamination apparatus as claimed in claim 30" for claim 37. Claims 27 and 37 provides for the use of the produce decontamination apparatus to create decontaminated produce, but, since the claim does not set forth any steps involved in a method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 27 and 37 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim 30 recites “the means” in lines 6-7, 11, and again in 15. It is unclear what each means is pertaining to.

Claim 30 recites “the second sprayheads” in line 17. However, claim 30 previously recites “one or more second atomizing sprayheads” in lines 15. It is unclear as to how many sprayheads there are.

Claim 20 depends from claim 19 and is likewise indefinite and claims 31-37 depend from claim 30 and are also indefinite.

4. The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

> Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the

> limitations of the claim to which it refers.

5. Claims 27 and 37 are rejected under 35 USC 112 4th paragraph, as being an improper dependent claim for failing to include all the limitations of the claim upon which it depends and for failing to further limit the subject matter of the claim upon which it depends. Specifically, claims 27 and 37 requires only the produce of claims 15 and 30, but claims 15 and 30 are drawn to a produce decontamination apparatus comprising parts for use with produce. In order to be a proper dependent claim, claims 27 and 37 would need to require both the produce decontamination apparatus and its components and produce of claims 15 and 30. As the Federal Circuit treats non-compliance with 35 USC 112 4th paragraph as a patentability issue, it is considered more appropriate to treat a claim that does not comply with 35 USC 112 4th paragraph by rejecting the claim under 35 USC 112 4th rather than by objecting to such claim under 37 CFR 1.75(c) as provided for in MPEP 608.01(n)(II). See *Pfizer Inc. v. Ranbaxy Labs., Ltd.*, 457 F.3d 1284, 1291-92 (Fed. Cir. 2006).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 15, 17-20, 25-28, 30-35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmar (2,417,932), in view of Eldredge (WO 01/78793 A1), in

view of August (4,800,090), in view of SpringerLink-Journal Article, and further in view of Potember (US 2004/0120845 A1).

Kalmar discloses a potato treating process in which the produce (potato (P)) is decontaminated in an apparatus (Fig. 2), the apparatus comprising: a substantially enclosed chamber (11, 12), the chamber having an inlet (area along drop board (45)) and an outlet (area along drop board (80)), a means for producing a free radical saturated atmosphere (29, 71) within the chamber (Fig. 2), the means for producing the free radical saturated atmosphere including a plurality of sprayheads (40, 49), the chamber including an upper conveyor belt (17) and a lower conveyor belt (63), where the upper conveyor belt overhangs (suspended over or hung over) the lower conveyor belt, and produce is moved from the upper belt and dropped to the lower belt before exiting the chamber (Fig. 2).

Kalmar does not appear to disclose the chamber having a negative pressure; a means for breaking down an ozone forming part of the ozonised liquid; means for catalyzing the breakdown of the ozone of the ozonised liquid once discharged; a catalyzing liquid which includes ferric ions that is supplied to the second sprayhead, in which the catalyzing liquid catalyses the breakdown of the hydrogen peroxide formed from the ozone of the ozonised liquid once discharged from the second sprayhead; the use of coatings as a means for catalyzing the breakdown of the ozone includes a coating on the interior surface of the chamber, the coatings having one or more ozone catalyzing materials.

Kalmar discloses the spray heads (29) can have a constant spacing between them (under section of chamber (11); Fig. 2) above the upper conveyor belt and run across the width of the conveyor belt. Kalmar discloses the claimed invention except for the sprayheads having a constant spacing over the lower conveyor belt as well as the upper conveyor belt. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the constant spacing and a plurality of spray heads over the lower belt, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.,* 193 USPQ 8.

Kalmar discloses the use of two conveyors (17, 63). Kalmar does not disclose that the vertical spacing between the conveyor belts is adjustable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the vertical spacing between the upper and lower conveyor belts be adjustable, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art.

Eldredge discloses a produce decontamination apparatus or sterilization apparatus (abstract line 1) comprising a chamber or sterilizing generator (100) for accepting produce to be decontaminated and/or sterilized, and means for producing a free radical saturated atmosphere within the chamber so that, in use, the free radical saturated atmosphere decontaminates and/or sterilizes the produce (abstract lines 1-5). Eldredge discloses that the means for producing a free radical saturated atmosphere comprises one or more first atomizing sprayheads (222), a supply of ozonised liquid

which is supplied to the first sprayheads (pg. 28 lines 1-5), and ultraviolet (UV) light emitting device (810) acts as a means for breaking down the ozone forming part of the ozonised liquid once discharged from the first sprayheads (pg. 21 lines 15-19). Eldredge discloses one or more second atomizing sprayheads (222, as schematically shown in Fig. 7) where one is a first atomizing sprayhead and another one is a second atomizing sprayhead. Eldredge discloses the use of coatings to limit the corrosive effects of the ozone (pg. 17 lines 22-24 – pg. 18 lines 1-4). Eldredge discloses that the means for producing a free radical saturated atmosphere further comprises means for catalyzing the breakdown of hydrogen peroxide formed from the ozone of the ozonised liquid once discharged (abstract lines 3-4). Eldredge discloses that the chamber is open to atmospheric pressure since the oxygen concentrator (108) is a part of the chamber (100) and extracts oxygen from the air (pg. 15 lines 20-21).

August discloses energy treatment of food in which a cooking region (10) is within a chamber (Fig. 1) and food is moved along conveyor (16, 18, 20) and a slight negative pressure can be imposed by which water vapor and other gases are drawn off through a port (4) (col. 4 lines 36-40).

SpringerLink-Journal Article discloses “hydrogen peroxide decomposition in acidic solutions is catalyzed by the free ferric ion, Fe^{3+}”.

Potember discloses a method and apparatus for neutralizing air-borne pathogens in ventilated air, and in heating or air conditioning systems in which coatings on an optional solid support on an interior surface of a reaction chamber acts as a means for

catalyzing the breakdown of ozone, the coatings having one or more ozone catalyzing materials (para. 0042).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Eldredge by employing negative pressure and port of August in order to control the exhaust and flow of gases within the area and the teachings of the SpringerLink-Journal Article and Potember in order to allow for an acidic solution which includes ferric ions as a catalyzing liquid to catalyze the breakdown of the hydrogen peroxide formed from the ozone of the ozonised liquid once discharged from the second sprayhead (since there are a plurality of spray heads) in order to aid the ultraviolet light emitting device to breakdown remaining hydrogen peroxide and ozone and further breakdown of the ozone by coatings on the interior surface of the chamber.

8. Claims 29 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmar, in view of Eldredge, in view of August, in view of SpringerLink-Journal Article, in view of Potember, and further in view of CSA Illumina.

Eldredge does not disclose that one of the ozone catalyzing materials is one of titanium oxide, titanium dioxide, or manganese oxide. CSA Illumina discloses that "manganese dioxide based catalysts provide the high ozone destruction…" Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Eldredge, with a manganese dioxide or manganese (VI) oxide coating as an ozone catalyzing material.

Response to Arguments

9. Applicant's arguments filed June 17, 2010 have been acknowledged. Applicant's arguments with respect to claims 15, 19, 20, and 25 have been considered but are moot in view of the new ground(s) of rejection as necessitated by amendment.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is advised to refer to the Notice of Reference Cited for pertinent prior art including Kuhl (6,821,353); Phebus (6,964,788); Gallo (5,858,435); Poovaiah (4,331,691); and Evett (2,316,159).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEMANT MATHEW whose telephone number is (571)270-5604. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HEMANT MATHEW/
Examiner, Art Unit 3742

/Henry Yuen/
Supervisory Patent Examiner, Art Unit 3742

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